

Claims 6-10 are rejected under 35 U.S.C. 112, second paragraph as being indefinite. In response, the applicants have amended claim 6 to correct this indefiniteness and minor changes have been made to claims 7, 8 and 10 in order to maintain consistency.

Claims 6-10 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Aid in view of Dempsey. In response, the applicants have again reviewed those references in view of the Examiner's remarks and consider the present claim to be patentably distinctive thereover for the reasons to be discussed hereinbelow.

The Examiner has said that "it would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Aid panel sides composed of metal for the purpose of achieving a desired heat exchange as recognized by Dempsey". In this regard, if one skilled in the art were to adopt the teachings of the Dempsey et al. reference to have the container of Aid be composed of a metal material, it would result in a single piece, molded, metal container with a pair of tapered pockets 106 and 107 for receiving the arms of the framed element 80. It would not result in "a clamshell heat exchanger panel comprising: a pair of formed sheet metal panel sides brought together in face to face relationship". Further regarding this point the Examiner has said that "regarding applicants remarks with respect to Aid, the applicants are reminded that the claims merely recite a device, namely a heat exchanger. There is nothing structural claimed to distinguish itself from the prior art of record". With this the applicants strongly disagree. The applicants have not merely recited "a heat exchanger" but rather "a clamshell heat exchanger comprising a pair of formed sheet metal panel sides brought together in face to face relationship". It is this recited structure which is substantially different from that shown by the Aid reference. That is, the single piece container made from plastic material, even if made from a metal material, cannot reasonably be construed to be a clamshell heat exchanger with panel sides brought together in face to face relationship. Instead, the Aid reference discloses a unitary container that is formed by molding or the like in a single integral piece.

For the benefit of the Examiner, further explanation of the clamshell concept may be in order. Although heat exchangers in general, and even heat exchangers for

furnaces, may be made of single pieces such as a serpentine piping arrangement, a more economical approach has been to mold a pair of mirror image metal sides and then bring them together in a clamshell fashion and secure them together at their edges in order to form the serpentine passages that result from the collective structures. With such a composite structure, the problem of securing a fastener thereto is significant. That is, with a unitary molded piece such as described in the Aid reference, provision can be easily made to include openings such as those shown in 106 and 107. However, this teaching cannot be easily adapted to a composite clamshell arrangement since the fastener receiving pocket can not be easily formed in either of the two sides by the stamping process. The applicants have therefore arrived at the solution of forming a half of the pocket in each of the two clamshell sides such that when they are brought together, they collectively form the pocket that can then be used to receive a fastener therein.

It is thus in this context that the features of a clamshell heat exchanger, and a pair of formed sheet metal panel sides brought together in face to face relationship become important in distinguishing over the cited references when taken individually or in combination. Considering further the possible combination of features of the two references, while the Dempsey reference does disclose a clamshell heat exchanger, there is nothing in either of the two cited references which would suggest how the metal material, or the clamshell structure, of the Dempsey reference might be incorporated into the design of the Aid container in order to obtain the applicant's invention. Neither is there a suggestion in either of references as to how the incorporation of the features of the openings 106 and 107 might be incorporated into the clamshell design of Dempsey in order to obtain the applicant's invention.

For these reasons, the applicants believe that the present claims are patentably distinctive over the cited references when taken individually or in combination. A reconsideration of the Examiner's rejections and a passing of the case to issue is therefore respectfully requested.

Inasmuch as the amendments were made for the purposes of cancelling claims and complying with the requirements of form expressly as set forth in the


previous Office Action, such amendments are considered proper and should be admitted.

If the Examiner believes that contact with Applicant's attorney would be advantageous toward the disposition of this case, the Examiner is herein requested to call Applicant's attorney at the phone number noted below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-0289.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

Attachment A

6. (Amended) A clamshell heat exchanger panel comprising:
a pair of formed sheet metal panel sides brought together in face-to-face relationship to form a dual sided structure that includes a channel portion and a land portion, said channel portion comprising a plurality of [sequential by] sequentially interconnected passages for the conduct of hot gas flow from an inlet opening to a discharge opening and said land portion being adjacent said channel portion and comprising a composite structure of said two sides pressed together; and
at least one elongate fastener receiving means disposed in said land portion, said fastener receiving means [being formed as an elongate pocket] having an axis in the plane of said composite structure.
7. (Amended) A clamshell heat exchanger panel as set forth in claim 6 wherein said [pocket] fastener receiving means is formed of curvilinear portions of each of said two sides.
8. (Amended) A clamshell heat exchanger panel as set forth in claim 6 wherein said [pocket] fastener receiving means has an opening that is at an edge of said composite structure.
10. (Amended) A clamshell heat exchanger panels as set forth in claim 6 wherein said [pocket] fastener receiving means is located with its axis between a first and second passage.

Attachment B

6. (Amended) A clamshell heat exchanger panel comprising:
a pair of formed sheet metal panel sides brought together in face-to-face relationship to form a dual sided structure that includes a channel portion and a land portion, said channel portion comprising a plurality of [sequential by] sequentially interconnected passages for the conduct of hot gas flow from an inlet opening to a discharge opening and said land portion being adjacent said channel portion and comprising a composite structure of said two sides pressed together; and
at least one elongate fastener receiving means disposed in said land portion, said fastener receiving means having an axis in the plane of said composite structure.
7. (Amended) A clamshell heat exchanger panel as set forth in claim 6 wherein said fastener receiving means is formed of curvilinear portions of each of said two sides.
8. (Amended) A clamshell heat exchanger panel as set forth in claim 6 wherein said fastener receiving means has an opening that is at an edge of said composite structure.
10. (Amended) A clamshell heat exchanger panels as set forth in claim 6 wherein said fastener receiving means is located with its axis between a first and second passage.